



Investment Risk Analytics

Program Description: Participants will gain a deeper understanding for the traditional investment risk concepts used in investment management introduced in recent years, many of them being reactions Financial Crisis of 2008. The concepts presented were selected with regard to application and implementation in real-world investment processes. We believe that investment risk modelling, measurement and management are not art for art's sake, but tools for investors and investment management professionals.

Target Audience: chief risk officers, quantitative analysts, investment committee members

Materials: Participants will receive a binder with the slides presented and access to spreadsheets containing example calculations for all models and concepts discussed.

The content of this program can be combined with content from other programs for customized **inhouse training** purposes. Please contact email@andreassteiner.net for details.

Information relating to **scheduling, course venues and pricing** for the public courses is available on www.andreassteiner.net/consulting

Day One

Welcome and Introduction

- The Economics of Risk: MPT
- The Philosophy of Risk: Risk & Uncertainty
- The Psychology of Risk: Behavioral Finance
- Observations in the Financial Crisis 2008 and Coronavirus Pandemic 2020

Volatility

- Introduction, Calculations, Interpretations
- Portfolio Volatility: Linear & Non-Linear Dependence
- Did Diversification Fail?
- Contribution Analysis
- Tracking Error
- Factor Models
- Limitations

Risk Measures Beyond Volatility

- Risk Measure Classification
- Desirable Properties of Risk Measures
- Loss-Based Risk Measures
 - Semi-Variance



- Partial Moments
- Value-At-Risk
- Conditional Value-At-Risk
- Drawdown Risk
- Tail Risk Analysis: Black Swans, Dragons & Extreme Events
- Contagion
- Full Distribution Measures
 - Omega
 - Stochastic Dominance

Exercises: Two group exercises will be solved during the first day

Day Two

Topics in Quantitative Risk Analysis

- The Riskfree Rate
- Dynamic Risk Analysis
- The Normal Distribution Assumption
- Outliers
- Non-Normal Distributions
- Historical, Parametric, Monte Carlo Approaches
- Introduction to Copulas

Integration of Performance and Risk Analysis

- Brinson Risk Attributions
- Integrated Risk and Return Attribution Analysis
- Risk-Adjusted Performance Attribution?

Stress Testing And Scenario Analysis

- Scenario Analysis
- Stress Testing
- Manipulating Correlations

Investment Risk Management

- Process Design Principles
- The Illusion of Control
- Risk Monitoring
- Considering other risk aspects
 - Counterparty risk
 - Liquidity risk
 - Model Risk

temExercises: Two group exercises will be solved during the second day